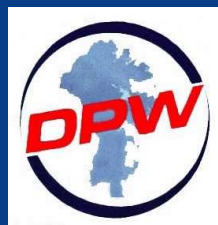


2016 Targeted Biological and Water Quality Monitoring



Study Design and Purposes

- Targeted Biological Work
 - MS4 Permit Compliance (partially).
 - Determine a baseline for current post-restoration conditions or pre-restoration stream reaches
 - Determine how projects mature over time
 - Determine if nearby biological conditions are influenced by the project
 - Determine if the project itself has an impact on biological conditions in the restoration reach
 - Full design documentation (QAPP, SOPs, other QC documents) available on-line
- Targeted Water Quality Work
 - ACOE Permit Compliance
 - MS4 Permit Compliance
 - Determine a baseline for current pre-restoration conditions
 - Determine efficacy of projects in nutrient, sediment reduction
 - SOPs, study plans, developed based upon regulatory requirements or study objectives, as applicable

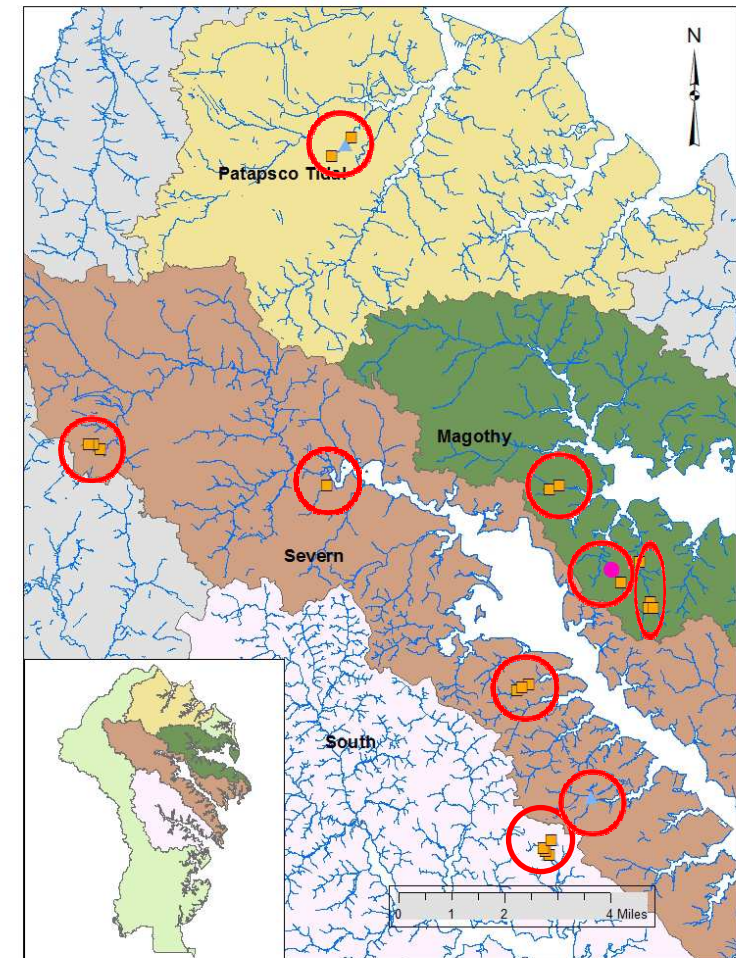
Sites and Locations

- Twenty one Biological Monitoring Sites

- Church Creek (4)
- UNT Severn River (1)
- Howard's Branch (3)
- Cypress Creek (2)
- Mill Creek (4)
- Dividing Creek (2)
- Picture Spring Branch (3)
- Furnace Branch (2)

- Five Chemical Monitoring Sites

- Cowhide Branch (1)
- Furnace Branch (1)
- Church Creek (2)
- Dividing Creek (1)



Methods

- Biological and Physical
 - Benthic macroinvertebrate and fish sampling: MBSS and County procedures
 - Habitat assessment: RBP and MPHI
 - Geomorphology: Rosgen Level II classification



Methods, cont.

- Chemical

- Automated storm event sampling and baseflow grab samples
- Non-MS4 stations: 23 parameters-- TN, TKN, NO₃, NH₃, TP, PO₄, Cu, Zn, Pb, Fe, Mg, Ca, TSS, Turbidity, BOD₅, COD, TOC, E. coli, VOC, Phenols, O&G, Hardness, Alkalinity
- MS4 stations: 11 parameters-- BOD₅, TKN, NO₃, TSS, TPH, E. coli, Pb, Cu, Zn, TP, Hardness
- Rainfall and discharge—on-site rain gages, stage to discharge relationships developed
- EMC and loading calculations performed



Questions?

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